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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|-------------------------------|------------------|
| 10/609,297 | 06/27/2003 | Mark A. Jaso | 2269-5593US (02-0967.01/U) | 7879 |
| 24247 | 7590 | 02/17/2005 | EXAMINER | |
| TRASK BRITT P.O. BOX 2550 SALT LAKE CITY, UT 84110 | | | VERSTEEG, STEVEN H | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 1753 | |

DATE MAILED: 02/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/609,297 | JASO ET AL. | |
| | Examiner | Art Unit | |
| | Steven H VerSteeg | 1753 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 27 June 2003.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-50 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) 22-42 is/are allowed.
- 6) Claim(s) 1-3, 15, 43, 45-47, 49 and 50 is/are rejected.
- 7) Claim(s) 4-14, 16-21, 44 and 48 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 27 June 2003 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>6/27/03</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____. |

DETAILED ACTION

Specification

1. This application does not contain an abstract of the disclosure as required by 37 CFR 1.72(b). An abstract on a separate sheet is required.
2. The disclosure is objected to because of the following informalities: the patent number for the parent application needs inserted at [0001].

Appropriate correction is required.

Claim Objections

3. Claims 4, 19, 21, 44, and 50 are objected to because of the following informalities: “target surface roughness” and “presence of asperities” in claims 4 and 44 is the same thing and thus, is a duplicate limitation and “comprising” should be “consisting of” in claims 19, 44, and 50 to utilize proper Markush terminology. Claim 21 depends from claim 19 and contains all of the limitations of claim 19. Therefore, claim 21 is objected to for the same reason as claim 19.
- Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by US 6,330,253 B1 to Tuganov et al. (Tuganov).

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6. For claim 1, Applicant requires an apparatus for measuring at least one characteristic of a surface in a chamber comprising a sensor configured to emit a first laser beam relative to the surface and to detect a second energy beam therefrom and an arm coupled to the sensor configured to transport the sensor relative to the surface. For claim 2, Applicant requires the first energy beam to be visible light, UV, infrared, RF, microwave, or ultrasound.

7. Tuganov discloses an apparatus (abstract) comprising a sensor on an arm (col. 9, l. 54 – col. 10, l. 11). The beam is at a wavelength of 1525-1575 nm (col. 4, l. 54-57).

Double Patenting

8. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

9. Claims 1-3, 43, 45-47, 49, and 50 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 2, 4, 9, 33, 38-40, 42, and 43 of U.S. Patent No. 6,811,657 B2. Although the conflicting claims are not identical, they are not patentably distinct from each other because the conflicting claims are fully encompassed by the claims of the patent. That is, claim 1 of U.S. Patent No. 6,811,657 B2 falls entirely within the scope of claim 1 or, in other words, claim 1 is anticipated by claim 1 of U.S. Patent No. 6,811,657 B2.

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10. The difference between claim 1 of the instant application and claim 1 of the patent is that claim 1 of the patent is specific as to the characteristic (i.e. erosion) and the surface (i.e. sputtering target) that is measured.

11. Claim 2 of U.S. Patent No. 6,811,657 B2 falls entirely within the scope of claim 2 or, in other words, claim 2 is anticipated by claim 2 of U.S. Patent No. 6,811,657 B2. The difference between claim 2 of the instant application and claim 2 of the patent is that already described above with regards to claim 1.

12. Claim 4 of U.S. Patent No. 6,811,657 B2 falls entirely within the scope of claim 3 or, in other words, claim 3 is anticipated by claim 4 of U.S. Patent No. 6,811,657 B2. The difference between claim 3 of the instant application and claim 4 of the patent is that already described above with regards to claim 1.

13. Claim 9 of U.S. Patent No. 6,811,657 B2 falls entirely within the scope of claim 15 or, in other words, claim 15 is anticipated by claim 9 of U.S. Patent No. 6,811,657 B2. The difference between claim 15 of the instant application and claim 9 of the patent is that claim 9 of the patent claims a plurality of detectors. As claim 15 of the instant application uses open-ended language "comprising", a plurality of detectors anticipates the detector claimed in claim 15.

14. In claim 33 of U.S. Patent No. 6,811,657 B2, the sputter deposition system is claimed comprising a sensor assembly configured to measure reflected light, an arm to selectively transport the sensor, and a controller coupled to the sensor assembly. The only difference between claim 43 of the instant application and claim 33 of the patent is that claim 43 of the instant application requires a chamber. A chamber is inherently present in claim 33 because a

sputter deposition system is used. Sputtering must occur within a chamber. Thus, claim 43 of the instant application is fully encompassed by claim 33 of the patent.

15. Claim 45 of the instant application requires the portion of the sensor attached to the arm to comprise a source element and at least one detector. Claim 38 of the patent claims the limitations.

16. Claim 46 of the instant application requires the source element and the at least one detector to each comprise a collimator configured to interface light with an optical filter. Claim 39 of the patent discloses the limitation.

17. Claim 47 of the instant application requires the sensor assembly to comprise a transmitter to receive a first electrical signal from the controller and to emit a first energy beam; and a receiver to receive a second energy beam and to communicate with a the controller. Claim 40 of the patent discloses the limitation.

18. Claim 49 of the instant application requires a robot electrically coupled to the controller to move the arm relative to the surface in the chamber. Claim 42 of the patent discloses the limitation.

19. Claim 50 of the instant application requires at least one peripheral device configured to electrically coupled to the controller wherein the at least one peripheral device is selected from the group consisting of chamber circuitry, an input device, an output device, and a data storage device. Claim 43 of the patent discloses the limitation.

Allowable Subject Matter

20. Claims 22-42 are allowed.

21. Claims 4-14, 16-18, 20, and 48 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

22. Claims 19, 21, and 44 would be allowable if written to overcome the claim objection presented above.

23. The following is a statement of reasons for the indication of allowable subject matter: it is neither anticipated nor obvious over the prior art of record to have a method for measuring the roughness of a sputtering target surface as claimed by Applicant in claim 22 or a method for detecting asperities on a sputtering target surface as claimed by Applicant in claim 28 or a method for analyzing deposits on a surface in a sputtering chamber as claimed by Applicant in claim 34.

24. US 6,416,635 B1 to Hurwitt et al. (Hurwitt) discloses sensing the eroded condition of a sputtering target by directly measuring the position of a point on the target, power consumption, deposition from the target, or other means (abstract). Hurwitt does not disclose measuring using an energy beam directed toward the target and reflected for detection and measurement.

25. US 4,983,269 to Wegmann discloses measuring the erosion of a target surface based upon the thermal conductivity of the target, but does not disclose measuring using an energy beam directed toward the target and reflected for detection and measurement.

General Information

For general status inquiries on applications not having received a first action on the merits, please contact the Technology Center 1700 receptionist at (571) 272-1700.

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For inquiries involving Recovery of lost papers & cases, sending out missing papers, resetting shortened statutory periods, or for restarting the shortened statutory period for response, please contact Denis Boyd at (571) 272-0992.

For general inquiries such as fees, hours of operation, and employee location, please contact the Technology Center 1700 receptionist at (571) 272-1300.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven H VerSteeg whose telephone number is (571) 272-1348. The examiner can normally be reached on Mon - Thurs (6:30 AM - 5:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam X Nguyen can be reached on (571) 272-1342. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Steven H VerSteeg
Primary Examiner
Art Unit 1753

shv
February 15, 2005